

REMARKS

Applicants acknowledge receipt of an Office Action dated February 13, 2008. In this response, Applicants have amended the specification and claims 1-15. In addition, Applicants have added claims 16-26. After amending the claims as set forth above, claims 1-26 are now pending in this application.

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Objection to the Specification

The specification is objected to for containing informalities. Applicant respectfully submits that the amendments to the specification render this objection moot. Reconsideration and withdrawal of this objection is respectfully requested.

Rejection under 35 U.S.C. § 112

Claims 3, 5, 7, and 12-15 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicant respectfully submits that the amendments to the claims render these rejections moot. Reconsideration and withdrawal of these rejections is respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 1, 2, and 8 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,300,209 to Mori (hereafter "Mori"). This rejection is respectfully traversed.

Amended claim 1 recites a soldering workpiece, comprising a soldering workpiece made from aluminum and/or aluminum compounds, and an oxide and/or hydroxide layer arranged at a surface of the soldering workpiece, wherein a thickness d of the oxide and/or hydroxide layer is greater than 25 nm, wherein the soldering workpiece is configured to be soldered so that solder is directly applied to the oxide and/or hydroxide layer. Claims 2 and 8 depend from claim 1.

Mori discloses an anodizing method for a metal film formed on a substrate, such as a thin-film transistor. See col. 1, lines 6-19, of Mori. Mori discloses that a lower electrode 22

can be made of an Al based alloy and that an oxide film 22b can be formed on the lower electrode 22 and that the oxide film 22b can have a thickness of 300 nm. See col. 6, lines 50-58, of Mori. However, Mori further discloses that additional layers are formed on the lower electrode 22 and the oxide film 22b, such as a SiN film 23, a Si layer 24, and an upper electrode 25.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See generally M.P.E.P. § 2131. Although the Office argues on page 3 of the Office Action that the device of Mori would be reasonably expected to perform as a soldering workpiece, Mori does not disclose that the additional layers (such as the SiN film 23, a Si layer 24, and the upper electrode 25) are formed by soldering or that any other soldering step is performed so that a solder is directly applied to the oxide film 22b of Mori. In fact, it appears that the additional layers would be deposited without the use of solder, such as via chemical vapor deposition. Therefore, Mori does not anticipate the soldering workpiece of claim 1 because the device of Mori is not a “soldering workpiece is configured to be soldered so that solder is directly applied to the oxide and/or hydroxide layer,” as recited in claim 1.

Reconsideration and withdrawal of this rejection is respectfully requested for at least the reasons discussed above.

Rejections under 35 U.S.C. § 103

Claims 3-5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori as applied to claim 1, and further in view of U.S. Patent No. 3,986,897 to McMillan *et al.* (hereafter “McMillan”). This rejection is respectfully traversed. McMillan fails to remedy the deficiencies discussed above in regard to independent claim 1, from which claims 3-5 depend.

For example, claim 4 further recites “wherein the oxide and/or hydroxide layer includes inhomogeneities.” Applicant submits that it would not have been obvious to combine the teachings of Mori and McMillan to provide the soldering workpiece of claim 4 because Mori teaches against the formation of defects. For example, Mori discloses in col. 2, lines 14-26, that pinholes are undesirable because they cause short circuits in transistor

devices. A proposed modification cannot render the prior art unsatisfactory for its intended purpose. See M.P.E.P. § 2143.01. It would not have been obvious to modify the device of Mori to include inhomogeneities in the oxide layer of Mori because such inhomogeneities could cause short circuiting in the device of Mori, thus rendering the device of Mori to be unsatisfactory for its intended purpose.

Reconsideration and withdrawal of this rejection is respectfully requested for at least the reasons discussed above.

Claims 6, 7, and 10-15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mori as applied to claim 1, and further in view of U.S. Patent No. 3,747,199 to Swaney, Jr. (hereafter "Swaney"). Swaney fails to remedy the deficiencies discussed above in regard to independent claim 1, from which claims 10-15 depend. Furthermore, Swaney regards a brazing process, which involves different considerations than a soldering process, such as higher processing temperatures relative to soldering. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori. As discussed above, Mori does not disclose or suggest all of the features of claim 1, from which claim 9 depends. Furthermore, it would not have been obvious to modify the device of Mori to provide the soldering workpiece of claim 9 because Mori does not disclose or suggest all of the features of claim 9. Reconsideration and withdrawal of this rejection is respectfully requested.

New Claims

New claims 16-26 have been added. Claims 16-21 depend from claim 1 and are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

Claim 22 recites a soldering process for joining at least two workpieces to one another. Claims 23-25 depend from claim 22. The references cited by the Office do not disclose or suggest all of the features recited in claim 22. For example, the references do not disclose or suggest the step of "growing an oxide and/or hydroxide layer arranged at a surface

of the soldering workpiece to a thickness sufficient to provide contact between a soldering compound and the soldering workpiece underneath the oxide and/or hydroxide layer during a subsequent soldering process,” as recited in claim 22. Furthermore, the references do not disclose or suggest an affirmative step of “introducing inhomogeneities into the oxide and/or hydroxide layer” as recited in claim 22. For example, Mori teaches against pinholes, as discussed above.

Claim 26 is directed to a soldering workpiece. The references cited by the Office do not disclose or suggest “an oxide and/or hydroxide layer grown at a surface of the soldering workpiece to a thickness sufficient to provide contact between a soldering compound and the soldering workpiece underneath the oxide and/or hydroxide layer during a subsequent soldering process,” as recited in claim 26. Furthermore, the prior art does not disclose or suggest “wherein the oxide and/or hydroxide layer includes inhomogeneities introduced into the oxide and/or hydroxide layer” as recited in claim 26.

CONCLUSION


Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By 

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